



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,367	03/12/2004	Douglas E. Thorpe	X-1627 US	8860
24309	7590	08/30/2007	EXAMINER	
XILINX, INC			SCHNEIDER, JOSHUA D	
ATTN: LEGAL DEPARTMENT			ART UNIT	PAPER NUMBER
2100 LOGIC DR			2182	
SAN JOSE, CA 95124			MAIL DATE	DELIVERY MODE
			08/30/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/800,367	THORPE ET AL.
Examiner	Art Unit	
Joshua D. Schneider	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1:136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 04 May 2007.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 16-20 and 31-45 is/are pending in the application.
- 4a) Of the above claim(s) 31-38 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 16-20 and 39-45 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date: _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claim 16 have been considered but are moot in view of the new ground(s) of rejection.

### *Election/Restrictions*

2. Newly submitted claims 31-38 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The claims include subject matter presented in the initial filing which was restricted and not elected. Claims 31-38 belong to Group II of the original restriction.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 31-38 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-20 and 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,112,297 to Ray et al. in further view of U.S. Patent 5,517,627 to Petersen.
5. With regards to claim 16, Ray teaches determining a data alignment of input data comprising a plurality of input bytes (recognition of misaligned data, column 2, line 65, through

column 3, line 5); configuring hardware to selectively transfer input data (aligned data pass through, column 3, lines 5-22); realigning said input data in the hardware based upon said data alignment of said input data (alignment and merging, column 3, lines 22-32); and outputting said realigned data (transferred on finish, column 3, lines 32-38), but does not clearly teach generating an input alignment signal indicating a shift required to realign said plurality of input bytes or configuring hardware according to a shifting configuration based upon said input alignment signal to selectively transfer input data. Petersen teaches determining a data alignment of input data comprising a plurality of input bytes (column 6, lines 6-20); generating an input alignment signal indicating a shift required to realign said plurality of input bytes (column 5, lines 41-46); configuring hardware according to a shifting configuration based upon said input alignment signal to selectively transfer input data (column 6, lines 21-35); realigning said input data in the hardware based upon said shifting configuration; and outputting said realigned data (column 5, lines 50-59). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the byte alignment control signals of Petersen with the alignment circuit of Ray in order to increase the efficiency of data transfer operations without requiring additional driving software.

6. With regards to claim 17, Ray teaches determining a data alignment of input data comprises a step of determining misaligned data (aligned data pass through, column 3, lines 5-22).

7. With regards to claim 18, Ray fails to teach, but Petersen teaches configuring hardware to selectively transfer input data comprises a step of configuring programmable hardware to generate an arbitrary byte alignment of said output (column 2, lines 3, through column 3, line

12). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the arbitrary byte alignment of Petersen with the alignment circuit of Ray in order to increase the efficiency of data transfer operations without requiring additional driving software.

8. With regards to claim 19, Ray fails to teach, but Petersen teaches configuring hardware to selectively transfer input data comprises a step of configuring programmable hardware to generate a fixed byte alignment of said output (column 1, lines 25, through column 2, line 39). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the fixed byte alignment of Petersen with the alignment circuit of Ray in order to decrease the complexity of data transfer operations without requiring additional driving software.

9. With regards to claim 20, Ray teaches concatenating a second plurality of input bytes with said plurality of input bytes (merging, column 3, lines 22-32).

10. With regards to claim 39, Ray teaches determining a data alignment of input data comprising a plurality of input bytes (recognition of misaligned data, column 2, line 65, through column 3, line 5); configuring hardware according to a shifting configuration to selectively transfer said input data to align said input data (aligned data pass through, column 3, lines 5-22); realigning said input data in said hardware based upon said shifting configuration (alignment and merging, column 3, lines 22-32); generating an output word comprising a predetermined number of bytes (column 7, lines 35-38); concatenating a plurality of output words having a predetermined number of bytes; and outputting said realigned data (transferred on finish, column 3, lines 32-38), but does not clearly teach generating an input alignment signal indicating a shift required to realign said plurality of input bytes or configuring hardware according to a shifting configuration based upon said input alignment signal to selectively transfer input data. Petersen

teaches determining a data alignment of input data comprising a plurality of input bytes (column 6, lines 6-20); generating an input alignment signal indicating a shift required to realign said plurality of input bytes (column 5, lines 41-46); configuring hardware according to a shifting configuration to selectively transfer said input data to align said input data (column 6, lines 21-35); realigning said input data in the hardware based upon said shifting configuration; and outputting said realigned data (column 5, lines 50-59). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the byte alignment control signals of Petersen with the alignment circuit of Ray in order to increase the efficiency of data transfer operations without requiring additional driving software.

11. With regards to claim 40, Petersen teaches storing a last valid data state to a register (column 7, lines 5-25).
12. With regards to claim 41, Petersen teaches coupling a valid output data byte to said register (column 7, lines 39-44).
13. With regards to claim 42, Petersen teaches receiving a valid input data bit for each byte of input data (column 2, line 65, through column 3, line 7).
14. With regards to claim 43, Ray teaches coupling a destination alignment signal to a multiplexer control circuit (desired destination alignment inherent to rotation control signal generation, Fig. 1C, element 302).
15. With regards to claim 44, Petersen teaches coupling a data alignment initialization signal to said multiplexer control circuit (current state signals inherent to generation of proper rotation signals, Fig. 1C, element 302).

16. With regards to claim 45, Petersen teaches generating multiplexer control signals based upon said destination alignment signal and said data alignment initialization signal (Fig. 1C, element 302, column 2, line 11-23).

*Conclusion*

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

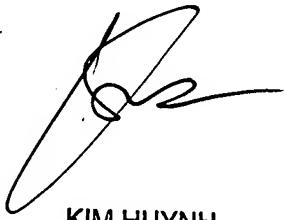
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Schneider whose telephone number is (571) 272-4158. The examiner can normally be reached on M, T, Th, and F, 9-4:00.

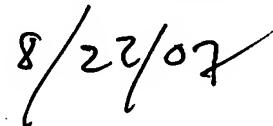
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JDS



KIM HUYNH  
SUPERVISORY PATENT EXAMINER



8/22/07